

CLAIMS

What is claimed is:

1. An apparatus for transferring heat during a burn-in, comprising:
a base member including a plurality of openings extending through the base member, at least one opening being arranged through the base member to correspond with each location of a socket on a burn-in board;
at least one heat sink aligned with each opening, the heat sinks each having a contact surface for engaging semiconductor devices positioned in respective sockets of the burn-in board; and
biasing members connected to the heat sinks for pressing the surfaces of the heat sinks against semiconductor devices positioned in the respective sockets.
2. The apparatus of claim 1, further comprising an attachment means for attaching the base member to the burn-in board, the base member upon attachment to the burn-in board being substantially removed from the burn-in board to allow the heat sinks to be positioned between the base member and the semiconductor devices.
3. The apparatus of claim 1, each biasing member comprising a member for applying a substantially constant force to the heat sinks.
4. The apparatus of claim 3, each biasing member including a first end connected to the base member by the support structures and a second end connected to the heat sink.
5. The apparatus of claim 4, the biasing members exerting a force on the heat sinks to provide the heat sinks with a compliant fit to the semiconductor devices.
6. The apparatus of the claim 1, each heat sink including a first portion and a second portion, the first portion defining the contact surface, the second portion including a plurality of upstanding spaced apart heat dissipating fins.

7. The apparatus of claim 1, the openings providing access for at least one of repair, measurement, and visual inspection of the semiconductor devices.
8. The apparatus of claim 2, the attachment means comprising at least one of a bolt and clamp.
9. The apparatus of claim 1, the base member comprising a metal plate that has a profile that minimizes obstruction to air flow during a burn-in procedure.
10. The apparatus of claim 1, further comprising at least one stabilization member that substantially inhibits lateral and torsional movement of the heat sinks while allowing longitudinal movement.
11. A burn-in system for burning-in a plurality of semiconductor devices, comprising:
 - a burn-in board including a plurality of sockets arranged on a surface of the burn-in board, each socket receiving a semiconductor device;
 - a substantially planar base member substantially removed from the burn-in board, the base member including a plurality of openings extending through the base member, at least one opening being arranged through the base member to correspond with each location of the sockets on the burn-in board;
 - at least one heat sink aligned with each opening, the heat sinks each having a surface for engaging the semiconductor devices positioned in the respective sockets; and
 - biasing members connected to the heat sinks for pressing the surfaces of the heat sinks against the semiconductor devices positioned in the respective sockets.
12. The apparatus of claim 11, further comprising an attachment means for attaching the base member to the burn-in board.
13. The apparatus of claim 11, each biasing member comprising a spring which applies a substantially constant force to the heat sinks.

14. The apparatus of claim 13, each spring including a first end connected to the base member by support structures and a second end connected to the heat sink.
15. The apparatus of claim 14, the base member comprising two laterally displaced openings aligned over each socket, each of the two openings being separated by a portion of the base member, the portion of the base member separating the two openings defining the support structures.
16. The apparatus of claim 15, the springs exerting a spring force on the heat sinks to provide the heat sinks with a compliant fit to the semiconductor devices.
17. The apparatus of the claim 11, each heat sink including a first portion and a second portion, the first portion defining the contact surface, the second portion including a plurality of upstanding spaced apart heat dissipating fins.
18. The apparatus of claim 11, the openings providing access for at least one of repair, measurement, and visual inspection of the semiconductor devices.
19. The apparatus of claim 12, the attachment means comprising at least one of a bolt and clamp that connects the base member to the burn-in board.
20. The apparatus of claim 11, the base member comprising a metal plate that has a profile that minimizes obstruction to air flow during a burn-in procedure.
21. The apparatus of claim 11, further comprising at least one stabilization member that substantially inhibits lateral and torsional movement of the heat sinks while allowing longitudinal movement.
22. A burn-in system for burning-in a plurality of semiconductor devices, comprising:

a burn-in board including a plurality of sockets arranged on a surface of the burn-in board, each socket receiving a semiconductor device;

a substantially planar base member substantially removed from the burn-in board, the base member including a plurality of openings extending through the base member, at least one opening being arranged through the base member to correspond with each location of the sockets on the burn-in board;

at least one heat sink aligned with each opening, the heat sinks each having a surface for engaging the semiconductor devices positioned in the respective sockets;

biasing members connected to the heat sinks and the base member for pressing the surfaces of the heat sinks against the semiconductor devices positioned in the respective sockets; and

an attachment means for attaching the base member to the burn-in board.

23. The apparatus of claim 22, further comprising at least one stabilization member that substantially inhibits lateral and torsional movement of the heat sinks while allowing longitudinal movement.

24. The apparatus of claim 22, each biasing member comprising a spring that exerts a spring force on the heat sinks to provide the heat sinks with a compliant fit to the semiconductor devices.

25. The apparatus of claim 22, each heat sink including a first portion and a second portion, the first portion defining the contact surface, the second portion including a plurality of upstanding spaced apart heat dissipating fins.

26. The apparatus of claim 22, the openings providing access for repair and measurement of the semiconductor devices.

27. The apparatus of claim 22, the attachment means comprising at least one of a bolt and clamp that connects the base member to the burn-in board.

28. The apparatus of claim 22, the base member comprising a metal plate that has a profile that minimizes obstruction to air flow during a burn-in procedure.